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Claims:

1. Conveying device also in an endless

Guide track on rolling members of current Trans haven carriage for assembly and/or working roads, D A dur C h g e k e n n z egg C h - it net that the transportation carriages (2) in denser Sequence adjacent free from play and without

Connection in the guide track (1) it runs and that the transportation carriages (2) at the along sides are provided set off guidance flat (12, 22) also to each other, whereby for the rectilinear and for the arcuate

Web sections special, alternate effective becoming guide surfaces provided are.

2. Conveying device according to claim 1, there by characterized that interior and outer course-lateral longitudinal guides (12, 22) exhibit in each case three to each other set off surfaces (12 A to 12 C and 22 A to 22c), of those the two outer surfaces (22 b and 22 C) of the interior course lateral (22) and the middle surface (12a) of the outer orbit-lateral longitudinal guide (12) on a rectilinear web section (1 A) and the middle

And the two outer surfaces (12 b and 12 C) of the outer orbit-lateral longitudinal guide (12) on an arcuate web section (1 b) as guide surfaces serve surface (22 A) of the interiorcourse-lateral (22).

3. Conveying device after the claims 1 and 2, characterised in that the guide surfaces effective on a rectilinear web section (1 A) (12 A, 22 b and 22 C) in a longitudinal plane parallel to the carriage longitudinal axis and the guide surfaces effective on an arcuate web section (1 b) (12 b, 12 C and 22 A) on two circular arcs lie, whose center with that of the arcuate web section (1 b) is identical.

4. Conveying device according to claim 1, characterised in that the longitudinal guides of the transportation carriages (12, 22) and them the associated surfaces of the guide track (1) prismenförmige recesses (3, 13) to the receptacle from balls, rollers and. such. existing rolling member (4) exhibit.

5. Conveying device after the claims 1 and 4, characterised in that the rolling members (4) in a cage held existing from a flexible band (5) are.

6. Conveying device after the claims 1, 4 and 5, characterised in that the rolling members (4) in the prismenförmigen recess (3, 13) housed and therein by means of a rigid guide wire (6) held are the matter.

7. Conveying device according to claim 1, characterised in that the transportation carriages (2) below the interiorcourse-lateral, prismenförmigen recess (3) an other recess (8) to the receptacle the carriage feed motion causative pin gearing (7) exhibit.

8. Conveying device according to claim 1, characterised in that of the transportation carriages (2) of one with a vertical opening (9) provided frame part consists.

 [top](#)



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Description of DE1273415

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Conveying device also in an endless guide track on rolling members current transportation carriages for assembly and/or working on roads

The invention refers to one promote-a-smells tung also to balls, rollers or similar rolls bodies of a guide track current transport carriage for assembly and/or working on roads.

Transportation carriages as device or movement piece-more inertial, which run on balls, rollers, needles or similar rolling members and are moved forward on one geradli nigen guide track, are known.

Also a conveying device is also in itself ge more schlossener, become known to endless carriage guide for transport carriage, with which the carriages at their each other to turned front surfaces by tabs with one another connected, lined up to a chain, are. Those for this as carriers of the tabs used pins are at each carriage of dual, in the region both front surfaces present and protrude at the underside of the carriage.

In addition each pin takes up still another roller, which is in a web standing from two endless angle rails guided.

The drawback of this Förderein specified last direction consists above all of the fact that due to the front carriage guide only the two to those

Pin put rollers, not however the point of central of the carriage one the center line of the Füh rungsbahn corresponding circular arcs describes.

This known carriage guide is on the trans haven of subject-matters, for example from Gussstücken, limited. When device or workpiece is more inertial, that the subject-matters of a working on station to the other transported, these carriages guidance inappropriate, since the lax connection zwi the single carriage accurate distance of the carriages among themselves ensured and the outside carriage guides do not schen prevent that the Zen tralpunkt the carriage central runs.

Furthermore it is a carriage guide bekanntgewor that, with which the carriage leads around its point of central ge is. In order to prevent however a tilting of the carriage, the adjacent front surfaces formed as paragraph-flat are by tabs connected, those no dimensional stability of the Schlittenab of conditions likewise ensure and likewise tilting that Carriages to prevent are not able to each other.

The invention is the basis the object, one

Conveying device for assembly and/or Bearbei corresponding transportation carriages tungsstrassen to create, their distances to each other accurate are and remain with an endless Füh existing from straight and arcuate portions rungsbahn as well as, which are tilt-safe guided and whose point of central describes one the center line of the Führungsb ancestor corresponding circular arc.

Thus an intensification of the working process is to become possible, by z. B. on the carriage stretched workpieces not only at the straight, but also machined accurate at the arcuate web

sections to become to be able.

According to the invention becomes the object by the fact dissolved that the transportation carriages run in dense sequence adjacent free from play and without connection in the guide track and that the transportation carriages at the longitudinal sides are provided set off guide surfaces also to each other, whereby for the rectilinear and for the arcuate web sections special, alternate effective becoming guide surfaces provided are.

Because according to the invention solid sledge bodies without lax connection dense together-borders, the carriage distance accurate can be fixed. The special, both on rectilinear and on arcuate web sections tuned longitudinal guide ensured not only a tilt-safe alignment of the single carriage, but also the adherence to a movement of the point of central of each carriage identical with the guide way center line. Beyond that the allowed longitudinal guide a frame-like formation of the carriage, so that the workpiece stretched on the carriage can become not only machined from above, but also simultaneous from downside by the large, middle carriage opening ago if necessary.

Other details of the invention are to be taken from the description and the drawing more near explained on the basis a remark with of play, F i G. shows. 1 the scheme, of an endless guide track in plan view, F i G., equipped with loose, dense together-seizing carriages. 2 after longitudinal section in F i G. 1 line shown II-II,

▲ top F i G. 3 and 4 two movement phases of the carriage on a rectilinear web section and F i G. 5 and 6 two movement phases of the carriage on arcuate web cut off.

In an endless, from two straight portions 1 A and two arcuate portions 1 b existing guide track 1 are in dense sequence, loose carriages 2 displaceable stored, whose point of central A is both on the rectilinear and on the arcuate web sections 1 A and 1 b accurate on the guide track center line b.

Each carriage 2 is provided with an outside and a interiorcourse-lateral longitudinal guide 12 and 22, in which - just as in the adjacent surfaces of the guide track 1 - continuous, prismenförmige recesses 3 and 13 provided are. In these prismenförmigen recesses 3, 13 is in regular interval rolling member 4 embedded, which preferably consists of steel balls. The distances between the single balls 4 are so dimensioned that the carriage is in a three or an edition of point of four free from play, but in the conveying direction light movable guided.

Thus the balls 4 carriages 2 adjacent in the clearances not of the Ausnehmungen 3, 13 to fall out can, are provided, to fix the balls 4 cage-like in a flexible stealing or plastic volume 5.

Another possibility of the determination consists of it, the balls 4 loosely in the prismatic recess 3 using and holding by a rigid guide wire 6 13.

The carriage feed motion can become on many way performed. So for example the carriage 2 can be carried forward by a lateral or below the guide track 1 arranged and to reciprocating movement participating transportation organ around the desired feed, whereby the other carriages 2 likewise participate in the same feed.

In accordance with Fig. 1 is a Triebstock 7 as carriage feed motion provided, whose teeth cause 8 at the interiorcourse-lateral longitudinal guide 22 engage into corresponding recesses and thus the feed of the carriages 2.

Because the carriage 2 is provided with a lateral guide, it can exist the machining tools of a solid frame part, by its large opening 9 od. such. also by the underside to the workpiece to be advanced can.

The single carriages 2 actual known curved front surfaces for mutual shifting of adjacent carriages 2 on the arcuate web section 1 b. possesses 2 A. In addition actual like already mentions - each carriage with one aussenund a interiorcourse-lateral longitudinal guide 12, 22 provide 2. Everyone of these longitudinal guides 12, 22 exhibits three surfaces; thus the outer orbit-lateral longitudinal guide consists 12 of the middle surface 12 A and the two outer surfaces 12 b and 12 C, while the interiorcourse-lateral longitudinal guide consists 22 of the middle surface 22 A and the two outer

surfaces 22 b and 22 C.

All six surfaces stand - like the F i G. 3 to 6 shows - in close relationship to each other, there is the outer surfaces 22 b and 22 C of the interiorcourse-lateral longitudinal guide 22 and the middle surface 12 A of the outer orbit-lateral longitudinal guide 12, which take over 1 A the carriage guide during the carriage movement on the rectilinear web section approximately over the balls 4. F i G. a movement phase shows 3 on a rectilinear web section with a guidance of point of four, with which four balls 4 lie close against three surfaces. Also in F i G. 4 phase shown is possible, in which however three balls 4 arrive at the plant. In each case are 2 ensured thereby a storage and a side guide free from play of the single carriage.

During the transition of the straight portion 1 A to the arcuate web section 1b a made guidance change of the surfaces in such a manner that in accordance with F i G. 5 the middle surface 22 A of the interiorlateral longitudinal guide 22 as well as the two outer surfaces 12 b and 12 C of the outer orbit-lateral longitudinal guide 12 altogether with three balls 4 into contact come, during in another possible movement motion when passing the circular path 1 b even four balls 4 against the same surfaces 12b, 12 C and 22 A lie close. The surfaces specified last lie on two circular arcs, whose center with that of the arcuate web section is 1 b identical.

Because thus also on the arcuate web sections three or guidance of point of four insists 1 b, is also here despite the friction-poor and maintenance-free carriage storage a side guide free from play ensured.